

CLAIMS:

1. A thermoplastic composition comprising polycarbonate, an impact modifier having a pH of about 3 to about 7, and a fire retardant essentially free of bromine and chlorine.
2. The composition of Claim 1, wherein the composition has a UL94 rating of V1 at a thickness of about 1 to about 1.5 millimeters.
3. The composition of Claim 1, wherein the composition has a UL94 rating of V0 at a thickness of about 1 to about 1.5 millimeters.
4. The composition of Claim 1, wherein the composition is essentially free of chlorine and bromine.
5. The composition of Claim 1, wherein the polycarbonate is based on bisphenol A.
6. The composition of Claim 1, wherein the polycarbonate is present in an amount of about 95 to about 99 weight percent based on the total weight of the polycarbonate and the impact modifier.
7. The composition of Claim 1, wherein the impact modifier is an acrylate impact modifier or a diene rubber impact modifier.
8. The composition of Claim 1, wherein the impact modifier is selected from the group consisting of methacrylate-butadiene-styrene, poly(butyl-acrylate)-methyl-methacrylate, poly(butyl-acrylate cosiloxane)-methyl-methacrylate and combinations of two or more of the foregoing.
9. The composition of Claim 1, wherein the impact modifier comprises methacrylate-butadiene-styrene.
10. The composition of Claim 1, wherein the impact modifier comprises a mixture of two methacrylate-butadiene-styrene resins having different pH values.

11. The composition of Claim 1, wherein the impact modifier has a pH of about 3.4 to about 6.0.

12. The composition of Claim 1, wherein the impact modifier is present in an amount of about 0.5 to about 5 weight percent, based on the total weight of the polycarbonate.

13. The composition of Claim 1, wherein the flame retardant is a salt based flame retardant.

14. The composition of Claim 1, wherein the flame retardant is selected from the group consisting of sodium, potassium, or tetraethyl ammonium perfluoromethylbutane sulfonate; sodium, potassium, or tetraethyl ammonium perfluoromethane sulfonate; sodium, potassium, or tetraethyl ammonium perfluoroethane sulfonate; sodium, potassium, or tetraethyl ammonium perfluoropropane sulfonate; sodium, potassium, or tetraethyl ammonium perfluorohexane sulfonate; sodium, potassium, or tetraethyl ammonium perfluoroheptane sulfonate; sodium, potassium, or tetraethyl ammonium perfluorooctanesulfonate; sodium, potassium, or tetraethyl ammonium perfluorobutane sulfonate; and sodium, potassium, or tetraethyl ammonium diphenylsulfon-3-sulfonate; and mixtures of two or more of the foregoing salts.

15. The composition of Claim 1, wherein the flame retardant is selected from the group consisting of potassium diphenylsulfon-3-sulfonate, potassium perfluorobutane-sulfonate, potassium perfluoromethane-sulfonate and combinations comprising two or more of the foregoing.

16. The composition of Claim 1, wherein the flame retardant is present in an amount of about 0.005 to about 2 weight percent, based on the weight of the polycarbonate.

17. The composition of Claim 1, wherein the composition further comprises polytetrafluoroethylene encapsulated in styrene acrylonitrile resin.

18. The composition of Claim 1, wherein the composition further comprises an additive selected from the group consisting of reinforcing agents; heat stabilizers; antioxidants; light stabilizers; plasticizers; antistatic agents; mold releasing agents; additional resins; blowing agents and combinations of two or more of the foregoing.

19. The composition of Claim 1, wherein the impact modifier is a combination of two impact modifiers having different pH values.

20. The composition of Claim 1, wherein the pH of the impact modifier has been modified using acid or base.

21. The composition of Claim 1, wherein the composition has a ductile-brittle transition temperature at or below -25°C according to ASTM D256.

22. A thermoplastic composition consisting essentially of polycarbonate, methacrylate-butadiene-styrene impact modifier having a pH of about 3 to about 7, polytetrafluoroethylene encapsulated in styrene acrylonitrile resin and a fire retardant essentially free of bromine and chlorine.

23. A thermoplastic composition consisting essentially of polycarbonate, a combination of methacrylate-butadiene-styrene impact modifiers having a combined pH of about 3 to about 7, polytetrafluoroethylene encapsulated in styrene acrylonitrile resin and a fire retardant essentially free of bromine and chlorine.

24. A method of making a thermoplastic composition comprising  
adjusting the pH of an impact modifier to a value of about 3 to about 7  
to make an adjusted impact modifier; and

melt mixing a mixture comprising the adjusted impact modifier,  
polycarbonate, and a fire retardant essentially free of chlorine or bromine.

25. The method of Claim 24, wherein the impact modifier is an acrylate  
impact modifier or a diene rubber impact modifier.

26. The method of Claim 24, wherein the impact modifier is selected from the group consisting of methacrylate-butadiene-styrene, poly(butyl-acrylate)-methyl-methacrylate, poly(butyl-acrylate cosiloxane)-methyl-methacrylate and combinations of two or more of the foregoing.

27. The method of Claim 24, wherein the impact modifier comprises methacrylate-butadiene-styrene.

28. The method of Claim 24, wherein the impact modifier comprises a mixture of two methacrylate-butadiene-styrene resins having different pH values.

29. The method of Claim 24, wherein the impact modifier has a pH of about 3.4 to about 6.0.

30. The method of Claim 24, wherein the flame retardant is a salt based flame retardant.

31. The method of Claim 24, wherein the flame retardant is selected from the group consisting of potassium diphenylsulfon-3-sulfonate, potassium perfluorobutane-sulfonate, potassium perfluoromethane-sulfonate and combinations comprising two or more of the foregoing.

32. The method of Claim 24, wherein the mixture further comprises polytetrafluoroethylene encapsulated in styrene acrylonitrile resin.

33. The method of Claim 24, wherein the impact modifier is a combination of two impact modifiers having different pH values.

34. The method of Claim 24, wherein the pH of the impact modifier has been modified using acid or base.

35. The method of Claim 34, wherein the acid is one or more acids selected from the group consisting of phosphoric acid, phosphorous acid, hypophosphorous acid, phosphinic acid, phosphonic acid, metaphosphoric acid, hexametaphosphoric acid, thiophosphoric acid, fluorophosphoric acid, difluorophosphoric acid, fluorophosphorous acid, difluorophosphorous acid, fluorohypophosphorous acid, and fluorohypophosphoric acid.